REMARKS

Applicant respectfully requests reconsideration of the present application in view of the above amendments and the following remarks.

Claims 32, 33 and 37-45 have been amended. Claims 32-52 are presented for prosecution on their merits.

I. SUMMARY OF OFFICE ACTION

The Examiner rejected Claim 45 under 35 U.S.C. § 112, first paragraph, because the Examiner believes that it fails to comply with the written description requirement. According to the Examiner, the claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

The Examiner objected to 33 because of the limitations "a means for circulating air within the interior of said chamber" is redundant in that it repeats limitations already claimed in independent claim 32.

The Examiner rejected Claims 32-34, 36-40, 42-44, 49, 51 and 52 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,716,676 to Imagawa.

The Examiner rejected Claims 35 and 50 under 35 U.S.C. § 103(a) as being unpatentable over Imagawa in view of U.S. Patent No. 6,141,901 to Johnson et al.

The Examiner rejected Claims 41 and 45-47 under 35 U.S.C. § 103(a) as being unpatentable over Imagawa and further in view of U.S. Patent No. 5,965,185 to Bianco or U.S. Patent No. 6,227,002 to Bianco et al.

The Examiner rejected claim 48 under 35 U.S.C. § 103(a) over Imagawa in view of U.S. Patent No. 3,814,315 to Dmysh.

II. SUMMARY OF APPLICANT'S INVENTION

Generally speaking, Applicant's invention is a portable/moveable apparatus for eradicating pests from products that are placed within the apparatus. Applicant's apparatus comprises a chamber having a ceiling and a floor, a door that allows ingress to and egress from the interior of the chamber, a means for heating the air before it enters the chamber, and at least one plenum for assisting in circulating the air in the interior of the chamber and for heating the interior of the chamber evenly.

In a related embodiment, Applicant's apparatus includes a control means for regulating the heating and air circulating means.

III. SUMMARY OF THE PUBLICATIONS CITED IN THE OFFICE ACTION

A. U.S. Patent No. 4,716,676 to Imagawa

Imagawa discloses a system for destroying insects which comprises a circulation chamber (A) that directs steam through a series of vertical self-contained units that enclose harvest boxes filled with fruit. The self-contained units are called "insect killing cells" (B). The circulation chamber utilizes a plurality of blowers 10 that move the steam in a horizontal direction. Each insect killing cell is a separate unit which includes a hood having a differential blower mounted on the hood to draw steam from the floor, through the fruit boxes and out the top of the hood (i.e., moves steam in a vertical direction). A heating device 13 and a cooling device 14

communicate with the circulation chamber (A) via a pair of discharge ports 15. A steam generator 12 also discharges directly into the chamber.

B. U.S. Patent No. 6,141,901 to Johnson et al.

Johnson et al. discloses a method of controlling pests by heating an area to a lethal temperature and maintaining the lethal temperature for at least eleven hours. The treatment is commenced after determining air penetration parameters for the treament zone. The temperature in the treatment zone is elevated at a rate of between 5° F and 10° F per hour until the air temperature reaches the lethal level.

C. U.S. Patent No. 5,965,185 to Bianco

Bianco discloses a transportable and size-adjustable apparatus for accelerating the ripening process of produce. The apparatus includes an air-flow control system for transferring air between a high pressure plenum and a low pressure plenum.

D. U.S. Patent No. 6,227,002 to Bianco et al.

Bianco et al. discloses an apparatus for cooling produce. The apparatus includes a container and a cooler. The cooler is movable between a first position where the cooler is disposed within the interior volume and a second position where the cooler is at least partially retracted from the interior volume.

E. U.S. Patent No. 3,814,315 to Dmysh

Dmysh discloses an apparatus for heating the interior of cargo trailers. The apparatus is secured to the external surface of the trailer via a curved housing.

IV. RESPONSE TO REJECTIONS AND OBJECTIONS

A. The Anticipatory Rejection (35 U.S.C. §102)

A rejection under 35 U.S.C. §102(b) requires that each and every element of the claimed invention be taught by the cited reference(s). Since a patent must describe and enable an invention to one skilled in the art, an anticipatory patent by definition must place the claimed invention into the public domain.

Imagawa is directed towards an apparatus that produces steam and utilizes that steam to kill insects. A heating system that heats water and produces steam is called a boiler in the heating industry.

. In contrast, Applicant uses heated air to terminate pests. Applicant uses a heater to heat the air inside the chamber, and not a boiler as disclosed in Imagawa.

One skilled in the art would readily recognize the differences between a technology that deals with heating air and a technology that deals with heating water or steam. (As evidence to support this statement, the undersigned attorney's home heating contractor only services boilers and refuses to work on hot air heaters.)

To further demonstrate that the Examiner's interpretation of a plenum is not accurate and therefore that his rejection of the claims as being anticipated by Imagawa is improper, and in accordance with 37 CFR § 1.132, Applicants submit herewith a Declaration of Jeffrey S. Helmes

(hereinafter the "Declaration"). The Declaration is being submitted to present objective evidence of patentability based on an analysis of the teachings of Imagawa.

Mr. Helmes has a Bachelors of Science Degree in Mechanical Engineering from Drexel University and has over twelve years experience including eight years working part-time with the Assignee of the present application. He is currently employed as a Senior Project Engineer at Maguire Products, Inc. in Aston, Pennsylvania.

As stated in Mr. Helmes' Declaration, he does not believe a plenum can be used to carry steam. In fact, Mr. Helmes states that "there are few similarities in a system that delivers steam and one that delivers heated air." (*See* Paragraph G of the Declaration.)

Since Imagawa discloses an apparatus that produces and delivers steam to kill insects, as a matter of general principle, it cannot disclose each and every element of Applicant's invention that claims the use of heated air to kill pests. As such, Applicant traverses the Examiner's rejection and respectfully requests that the rejection based on §102 be withdrawn.

To be even more specific, Applicant submits that Imagawa utilizes a boiler and, therefore, can neither disclose or suggest the use of a heater that heats air.

The Examiner goes on record to define a "plenum" as an "air-filled space." Imagawa states throughout the specification that the invention produces steam to kill insects. No where does Imagawa disclose or suggest that it utilizes hot air to kill pests/insects, and the Examiner has failed to identify any "air-filled space" in Imagawa. In fact, by definition, there can be no air-filled spaces in Imagawa – only spaces filled with steam. As one skilled in the art can readily testify, "air" is not "steam" (Also, *see* the Declaration), and Imagawa, by the Examiner's own definition, cannot disclose or suggest a space filled with air!

Applicant further submits that Imagawa does not disclose or suggest a plenum as is commonly defined in the art.

The Examiner begins his analysis with respect to independent claims 32 and 49. The Examiner states that "Imagawa discloses a chamber, a first end, a second end, a ceiling, a sub-ceiling and a floor." The Examiner continued by stating that the ceiling and sub-ceiling forms a plenum and directs Applicant to Figures 2, 6 and 7.

Applicant respectfully submits that the Examiner's characterization of Imagawa as having a plenum is not correct. The Examiner disguises his rejection by not referring to specific elements but by broadly referring to mulitple figures. (The Examiner could even mark-up a drawing to indicate the structure in Imagawa he believes is serving as a plenum.)

The Imagawa patent issued in 1988, if Imagawa did use a "plenum" it would have been a simple matter to use the term "plenum" in the specification instead of developing the term "insect killing cells."

Imagawa discloses a chamber (A) with a first end, a second end, a left wall, a right wall, a ceiling and a floor. However, there is no sub-ceiling shown or discussed in Imagawa. Although Figure 2 (to which the Examiner refers) appears to show a "sub-ceiling," the element is actually a beam 27 that is supported by its own support structure within chamber (A), as can be clearly seen in Figures 1, 3 and 4. Beams 27 are used in conjunction with a pulley or wench 26 to form a "winding means." (See column 3, lines 20-25 of Imagawa.) The winding means is designed to "move vertically" hoods 21. The hoods 21 cap each "insect killing cell" (B) of Imagawa.

The Examiner makes numerous references to Figures 2, 6 and 7 of Imagawa to support his position that Imagawa discloses a ceiling plenum. Unfortunately, Applicant is not sure what

the Examiner is referring to since the Examiner refuses to use reference numerals. Applicant has already discussed what Figures 1, 3 and 4 disclose.

The Examiner's continued insistence that a sub-ceiling is shown in Figures 2, 6 and 7 of Imagawa is not only wrong, it is now troubling because it is clear that the Examiner does not even begin to understand the invention disclosed in Imagawa! Figure 3 is a cross-sectional view of Imagawa's Figure 2 taken along line X-X. The hood lifting assembly is more clearly shown in Figure 3, and there is absolutely no sub-ceiling shown or suggested.

Referring to Figures 6 and 7, Imagawa discloses a chamber within a chamber. The inner chamber is suspended off the floor of the outer chamber so that a space separates the walls and ceiling and floor. Imagawa does not disclose limiting the distance between the ceiling of the outer chamber and the ceiling of the inner chamber, the distance between the outer chamber's walls and the inner chamber's walls, or the distance between the outer chamber's floors and the inner chamber's floors. The inner chamber is plopped down inside the outer chamber without any consideration for air flow. If the inner chamber is removed, there would be no plenum or any other structure, just a large outer chamber. As indicated in Mr. Helmes' Declaration, there is no specific or dedicated enclosed portion taught by Imagawa. As illustrated in Applicant's specification, the sub-ceiling is specifically designed to accomodate the amount of heat and the type of objects to be heated. Applicant is unsure how placing a chamber within a chamber forms a ceiling plenum. Moreover, plenums are designed to facilitate movement of air, while Imagawa's inner chamber appears to hinder all flow/circulation. If not for the holes made in the top of the inner chamber, steam, air etc. would be unable to reach the fruit located within the inner chamber.

Imagawa simply does NOT disclose, nor does it suggest, a sub-ceiling or a ceiling plenum. Therefore, Imagawa cannot anticipate nor make obvious Applicant's Claims 32 and 49, or any claim that depends directly or indirectly from them (i.e., Claims 33-43 and 50-52).

Applicant has amended Claim 32 so that it expressly claims a plenum. Claim 49 has always included a plenum.

Mr. Helmes' Declaration establishes that a "plenum" as commonly used in the industry, is usually more than just "an air-filled space" as the Examiner states in the outstanding Office Action. More specifically, the Declaration expressly contradicts the Examiner's contention that Applicant's plenum is disclosed or suggested by Imagawa.

Applicant's plenum assists in the even heating of the interior of the chamber. As indicated in Applicant's Figure 10B, the plenum directs the heated air so that the object (e.g., pallets) closest to the heater are not heated to a noticably higher temperature than the pallets located further away. The Applicant utilizes a plenum to assist in evenly distributing the heat throughout the chamber and, not only is the physical structure not disclosed, this particular use of a plenum is not disclsoed in Imagawa or in any art cited by the Examiner.

In contrast, Imagawa just dumps the heated air over the trays holding the fruit and does not teach the even heating of the air within the chamber or of the produce. In Imagawa the produce closest to the heater would be at a higher temperature than the produce furthest away. This can have two repercussions; either the produce closest to the heater gets overheated and is destroyed, or the produce furthest away does not reach a temperature that is lethal to pests thereby failing to destroy the pests.

It is obvious that the insect killing cells of Imagawa do not form a plenum and that the fruit closest to the floor in Imagawa are heated to a higher temperature than the fruit at the top of the cell, and the fruit closest to the boiler in Imagawa are heated to a higher temperature than the fruit furthest away from the boiler. This is true in all embodiments disclosed by Imagawa (including the embodiments shown in Figures 2, 6 and 7).

For the aforementioned numerous reasons, U.S. Patent No. 4,716,676 to Imagawa does not disclose each and every element of Applicant's claimed invention as amended; therefore, Imagawa cannot anticipate Applicant's invention. Moreover, Imagawa does not disclose or suggest a plenum, or a hot-air heater and other features claimed by Applicant so that Imagawa cannot make obvious Applicant's claimed invention. Applicant has traversed the Examiner's rejection and respectfully requests the withdrawal of the rejection based on 35 U.S.C. §102.

Applicant has amended claim 33 to expressly claim a second plenum. Not only does Imagawa fail to disclose one plenum, it fails to disclose two plenums.

With respect to claim 34, Applicant submits that Imagawa cannot disclose the use of a indirect fired heater because Imagawa relies on steam. An indirect fired heater would not normally produce steam. The Examiner refers Applicant to column 3, lines 1-42 as support for his statement that Imagawa discloses an indirect fired heater. The only place Imagawa appears to mention the type of heater is in column 3, lines 1-2. Based on the Examiner's broad generalizations regarding the figures without pointing out reference numerals, Applicant again respectfully questions the Examiner's lack of understanding of Imagawa. Imagawa only discloses the use of a steam generator 12. There is no disclosure or suggestion of using an

indirect fired heater. Accordingly, the rejection of claim 34 is traversed and the Examiner must withdraw his rejection as it relates to claim 34.

With respect to Claim 36, Applicant expressly claims the recirculation of air and not steam. Imagawa discloses the circulation of steam and does not disclose the recirculation of hot air and therefore cannot anticipate or make obvious Applicant's claim 36.

With respect to Claim 37, Applicant expressly claims a duct axial fan. The Examiner asserts that Imagawa discloses a duct axial fan and as support for this assertion refers to Figure 2. Applicant respectfully submits that it is impossible to ascertain from Imagawa's Figure 2 that it utilizes a duct axial fan. The Examiner's rejection is baseless and must be withdrawn.

With respect to Claim 38, Imagawa does not disclose a floor being reinforced to support the weight of a forklift. In fact, Imagawa teaches directly away from Applicant's claim 38 since Imagawa clearly states that the cells are placed on the conveyor roller at the chamber's door and then slid into the chamber. (See column 3, lines 57-62.)

With respect to claim 38, the Examiner appears to claim that Imagawa's floor is inherently of significant thickness to support the weight of machinery. As the Examiner should know, one cannot read that type of specificity into a drawing. Without Imagawa expressly stating such a claim in the specification, the Examiner's rejection is baseless and the rejection of claim 38 must be withdrawn.

With respect to claim 39, Imagawa does not circulate heated air. Accordingly, Imagawa does not disclose Applicant's invention as claimed in Claim 39.

As indicated above, Imagawa does not disclose a sub-ceiling as claimed by Applicant. Applicant has already traversed the Examiner's rejection regarding Claim 42.

The Examiner states that Imagawa discloses an inlet as claimed by Applicant in claim 44. The Examiner states that Imagawa's reference numeral 12 is this inlet. As stated at column 3, lines 1-2 of Imagawa, reference numeral 12 is a steam generator and is not an inlet. Once again the Examiner has failed to understand the teachings of Imagawa.

With respect to claim 43, Applicant claims an inlet for allowing make-up air to be introduced into the apparatus. Imagawa cannot utilize make-up air because the air having an inherently lower humidity, would severely dilute the steam produced by Imagawa's boiler. Imagawa would, at a minimum, need a system that simultaneously introduces more water to compensate for the low water content in the make-up air.

Applicant's claim 44 expressly claims a chamber having means for lifting by external machinery. The Examiner makes an illusive reference to some feature in Imagawa referred to by reference numerals 10a, 25. Item 10a in Imagawa is an air blower and item 25 is a pallet. As can be clearly seen in Figures 2, 3, 5, 6 and 7, Imagawa has structures bolted to the ground. In Figures 2 and 3 it is the structure that is used to lift the hoods off of the insect killing cells. In Figures 6 and 7, the inner chamber is physically secured to the ground. There is absolutely no disclosure or suggestion of moving Imagawa's outer chamber as claimed by Applicant. Imagawa's apparatus was designed to be a permanently placed and does not even suggest moving the chamber. Therefore, Imagawa cannot make obvious Applicant's Claim 44.

With respect to claim 52, the Examiner states that Imagawa discloses a primary floor spaced apart and above the chamber floor and once again refers Applicant to Figures 1-7 of Imagawa. However, the Examiner also generously refers the Applicant to columns 2-5!!! Columns 2-5 forms the entire Detailed Description of Imagawa.

Applicant submits that it is a stretch to refer to rollers 16 of Imagawa as a floor. Imagawa's reference numberal 17 does not form a sub-floor as claimed by the Examiner but is a beam having a rectangular cross-section that is used to support the rollers 16. More importantly, Applicant's claim 52 expressly recites "perforations being sized, shaped and spaced in order to communicate with the means for circulating, said heating means and said ceiling plenum to further improve and distribute heat evenly within the interior of said chamber." Imagawa is not concerned with such structural features. There is nothing special regarding the spacing of the rollers of Imagawa. The only reasonable consideration is that the rollers are spaced close enough together to prevent the pallets from falling through the rollers.

Rollers 16 purchased from a third party manufacturer would not be designed to act as a primary floor that can be combined with a sub-floor to define a plenum. The manufacturers of the roller system are in a completely different art area and would have little idea on how to form a plenum. The only measurement that a roller manufacturer would take into consideration would be the distance between individual rollers so that the items (harvest boxes in Imagawa's case) sliding across the rollers would not drop in between the rollers; there would be no consideration for controlling air flow.

In the embodiments shown in Figures 6 and 7, Imagawa does not mention the size, spacing or shape of the steam holes in the bottom of the inner chamber. Imagawa does disclose the use of the differential blowers 22 to control the amount of steam within the insect killing cells. Therefore, Imagawa cannot anticipate or make obvious Applicant's claim 52.

B. <u>The Obviousness Rejections (35 U.S.C. §103)</u>

With respect to claims 32 and 49, the Examiner says that Johnson et al. discloses a direct-fired system. Johnson's heater heats air and outputs heated air. Imagawa discloses a system that uses steam which cannot be produced by a direct-fired system. The Examiner cites Imagawa as the primary reference.

The Examiner states in the Final Office Action that Imagawa's heater can merely be swapped out with Johnson's heater. As indicated in Mr. Helmes Declaration, the production and delievery of steam requires specially adapted equipment. The Examiner's statement about "merely swapping" heaters is not correct.

The combination of Imagawa with Johnson et al. would render Imagawa unsatisfactory for its intended purpose, so there is no motivation or suggestion to make the proposed combination. Therefore, the Examiner's combination of Imagawa with Johnson et al. is defective on its face and must be withdrawn. (See MPEP §2143.01.)

With respect to 41, and 45-47, the Examiner cites the combination of Imagawa with either Bianco or Bianco et al. Bianco discloses a moveable apparatus, but there is no suggestion or motivation in either Bianco or Imagawa to make the required modifications. Further, even if the combination was proper, Bianco and/or Bianco et al. do not overcome the other deficiencies of Imagawa. Since Claim 41 depends indirectly from independent claim 32, and Claims 45-47 depend directly from independent Claim 44; the combination of Imagawa and Bianco/Bianco et al. still does not disclose the plenum and other features as claimed by Applicant.

With respect to claims 48, the Examiner says that Dmysh discloses a system for attaching a heater outside of the chamber. However, Dmysh is very particular with respect to the type of heater it utilizes in order to solve other issues. Specifically, Dmysh discloses the use of a catalytic heater – and no other heater. Imagawa discloses a system that uses steam which is not compatible with a catalytic heater. The combination of Dmysh with Imagawa would render Imagawa unsatisfactory for its intended purpose, so there is no motivation or suggestion to make the proposed combination. Therefore, the Examiner's combination of Imagawa with Dmysh is defective on its face and must be withdrawn. (See MPEP §2143.01.)

C. <u>The Non-Art Issues</u>

With respect to Claim 45, Applicant submits that the term "reefer" is any type of box-shaped container or trailer that is insulated. Reefer containers are insulated because they are usually refrigerated. At page 16, lines 7-8 of the specification, Applicant discloses that the chamber may be "constructed from an insulated or non-insulated commercial trailer." One skilled in the art would realize, after reading Applicant's description, that virtually any type of container can be used or modified to form the chamber and, in particular, would identify an insulated commercial trailer as a reefer container.

Applicant respectfully directs the Examiner to the Google.com website in which a search for the term"reefer box" returns a result of 126,000 "hits." Although Applicant did not search through all 126,000 hits, many hits, including the most relevant hits, clearly describe the term reefer box. Since Applicant is using the common definition of the term "reefer box" (i.e., an

insulated trailer or container), Applicant submits that it has complied with the written description requirement.

Applicant has amended Claim 33 and believes that there is no longer any redundency with the terms in claim 32.

V. CONCLUSION

Applicant has responded to all of the objections/rejections raised by the Examiner in the outstanding Final Office Action.

The differences between the prior art as a whole and the presently claimed invention are substantial. Imagawa is fundamentally different in how it attacks insects since it discloses the use of steam. In contrast, Applicant uses heated air to kill insects. Further, Imagawa neither discloses nor suggests a chamber having the features claimed by Applicant. For example, Imagawa does not disclose or suggest a plenum as claimed by Applicant. Since Imagawa does not disclose or suggest an apparatus that uses heated air, an apparatus that has a plenum and/or an apparatus that heats the interior of a chamber evenly, Applicant has traversed all art rejections based on Imagawa.

In view of the above, Applicant believes that this Reply and Amendment places the application in condition for allowance. Applicant respectfully requests reconsideration of the present application in view of the above amendments and remarks, and the early issuance of a Notice of Allowance for Claims 32-52.

Should the Examiner have any questions regarding the allowability of the present application, he is invited to telephone the undersigned in order to expedite the examination of the subject application.

Respectfully submitted,

Daniel P. Topp

Date: 13 JANUARY 2005

Mark A. Garzia, Esquire
Registration No. 35,517
Attorney for Applicant
Law Offices of Mark A. Garzia
2058 Chichester Ave.
Boothwyn, PA 19061
Telephone: (610) 485-9400

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CERTIFICATE OF MAILING

I hereby certify that this Reply and Amendment, along with any paper or fee indicated as being enclosed, is being deposited with the United States Postal Service as First Class Mail, postage prepaid, and addressed to the Mail Stop - AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below.

Date: January 13, 2005

Mark A. Garzia